

WHAT IS CLAIMED IS:

1. A thin-film semiconductor device comprising:
a first plurality of thin-film transistors having different driving voltages than a second plurality of thin-film transistors, wherein said first and second plurality of transistors are formed on a glass substrate,
wherein an electric field of a gate electrode at each of said driving voltages of said first and second plurality of thin-film transistors is in a range of about 1MV/cm to 2MV/cm, and a drain concentration of P-type thin-film transistors is in a range of about $3\text{E}+19/\text{cm}^3$ to $1\text{E}+20/\text{cm}^3$.
2. The thin-film semiconductor device according to claim 1,
wherein said first plurality of thin-film transistors comprising N-type and P-type thin-film transistors have a lower driving voltage than said second plurality of thin-film transistors comprising N-type and P-type thin film transistor.
3. The thin-film semiconductor device according to claim 1,
wherein a plurality of gate insulating films of said first and second plurality of thin-film transistors have substantially the same thickness.
4. The thin-film semiconductor device according to claim 2,
wherein at least one N-type thin-film transistor of said second plurality of thin-film transistors have a lightly-doped drain structure.
5. A thin-film semiconductor device comprising:
a first plurality of thin-film transistors having different driving voltages than a second plurality of thin-film transistors, wherein said first and second plurality of transistors are formed on a glass substrate,

wherein an electric field of a gate electrode at each of said driving voltages of said first and second plurality of thin-film transistors is in a range of about 0.2MV/cm to 0.8MV/cm, and a drain concentration of P-type thin-film transistors is in a range of about $3\text{E}+19/\text{cm}^3$ to $1\text{E}+20/\text{cm}^3$.

6. The thin-film semiconductor device according to claim 5, wherein said first and second plurality of thin-film transistors comprising N-type and P-type thin-film transistors have a lower driving voltage than said second plurality of thin-film transistors comprising N-type and P-type thin film transistor.

7. The thin-film semiconductor device according to claim 5, wherein a plurality of gate insulating films of said first and second plurality of thin-film transistors has substantially the same thickness.

8. The thin-film semiconductor device according to claim 6, wherein at least one N-type thin-film transistor of said second plurality of thin-film transistors have a lightly-doped drain structure.

9. A thin-film semiconductor device comprising:
a first plurality of thin-film transistors having a driving voltage which is lower than a driving range of a second plurality of thin-film transistors, wherein said first and second plurality of thin-film transistors are formed on a glass substrate,
wherein a drain concentration of said first and second plurality of thin-film transistors is in a range of about $3\text{E}+19/\text{cm}^3$ to $1\text{E}+20/\text{cm}^3$.

10. The thin-film semiconductor device according to claim 9, wherein a plurality of gate insulating films of said first and second plurality of thin-film transistors have substantially the same thickness.

11. The thin-film semiconductor device according to claim 9,
wherein said first and second plurality of thin-film transistors comprise N-type and P-type thin-film transistors.

12. The thin-film semiconductor device according to claim 9,
wherein gate insulating films of said first and second plurality of thin-film transistors are formed of substantially the same materials.

13. A liquid crystal display comprising:
a thin-film semiconductor device according to claim 1; and
a driver circuit.

14. A liquid crystal display comprising:
a thin-film semiconductor device according to claim 9; and
a driver circuit.

15. A thin-film semiconductor device manufacturing method comprising:
providing a glass substrate
forming a plurality of gate insulating films of a plurality of thin-film transistors,
wherein said gate insulating films are formed so as to have a substantially the same thickness,
and
wherein said plurality of thin-film transistors have different driving voltages.

16. The thin-film semiconductor device manufacturing method according to claim 15,
wherein said gate insulating films are formed at substantially the same time.

17. The thin-film semiconductor device manufacturing method according to claim 15, further comprising:

forming source/drain regions of a plurality of P-type thin-film transistors having different driving voltages.

18. The thin-film semiconductor device manufacturing method according to claim 15, further comprising:

forming source/drain regions of a plurality of N-type thin-film transistors having different driving voltages.

19. The thin-film semiconductor device manufacturing method according to claim 17,

wherein said source/drain regions are formed at substantially the same time.

20. The thin-film semiconductor device manufacturing method according to claim 18,

wherein said source/drain regions are formed at substantially the same time.

21. The thin-film semiconductor device manufacturing method according to claim 18, further comprising:

forming Lightly-doped drain structure on at least one part of the N-type thin-film transistors.